

**IFWO** 

RAW SEQUENCE LISTING

DATE: 09/14/2004

PATENT APPLICATION: US/10/625,821A

TIME: 10:07:22

Input Set : A:\55022div.app

Output Set: N:\CRF4\09142004\J625821A.raw

```
3 <110> APPLICANT: MORI, SATOSHI
        NAKANISHI, HIROMI
         OKI, HIROYUKI
        YAMAGUCHI, HIROTAKA
 8 <120> TITLE OF INVENTION: METHOD FOR TRANSFORMING PLANT, THE RESULTANT PLANT AND
         GENE THEREOF
11 <130> FILE REFERENCE: 55022-DIV (71526)
13 <140> CURRENT APPLICATION NUMBER: 10/625,821A
14 <141> CURRENT FILING DATE: 2003-07-22
                                                            ENTERED
16 <150> PRIOR APPLICATION NUMBER: 09/646,825
17 <151> PRIOR FILING DATE: 2000-09-22
19 <150> PRIOR APPLICATION NUMBER: JP/10-96637
20 <151> PRIOR FILING DATE: 1998-03-24
22 <160> NUMBER OF SEQ ID NOS: 38
24 <170> SOFTWARE: PatentIn Ver. 2.1
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 2092
28 <212> TYPE: DNA
29 <213> ORGANISM: Artificial Sequence
31 <220> FEATURE:
32 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
         saccharomyces cerevisiae
35 <220> FEATURE:
36 <221> NAME/KEY: CDS
37 <222> LOCATION: (20)..(2077)
39 <400> SEQUENCE: 1
40 gaatteteta gaeteeace atg gtt aga ace aga gte ett tte tge ete tte
41
                        Met Val Arg Thr Arg Val Leu Phe Cys Leu Phe
42
44 atc tct ttc ttc gct aca gtc caa tcg agc gct aca ctc atc tcc act
45 Ile Ser Phe Phe Ala Thr Val Gln Ser Ser Ala Thr Leu Ile Ser Thr
                15
48 tea tgc att tet cag get gea etg tac cag tte gga tgc tea age aag
49 Ser Cys Ile Ser Gln Ala Ala Leu Tyr Gln Phe Gly Cys Ser Ser Lys
52 toa aag tot tgo tao tgo aag aac ato aat tgg oto gga ago qto act
                                                                     196
53 Ser Lys Ser Cys Tyr Cys Lys Asn Ile Asn Trp Leu Gly Ser Val Thr
                           50
56 gca tgc gct tat gag aac tcc aaa tct aac aag act ctg gac tcc gct
57 Ala Cys Ala Tyr Glu Asn Ser Lys Ser Asn Lys Thr Leu Asp Ser Ala
                       65
                                           70
60 ttg atg aaa ctt gcc agc caa tgc tca agt atc aag gtt tac aca ctg
                                                                     292
```

61 Leu Met Lys Leu Ala Ser Gln Cys Ser Ser Ile Lys Val Tyr Thr Leu

RAW SEQUENCE LISTING

DATE: 09/14/2004 PATENT APPLICATION: US/10/625,821A TIME: 10:07:22

Input Set : A:\55022div.app

62					80					85					90		
64	gag	gac	atg	aag	aac	atc	tac	ctt	aat	gca	agt	aac	tac	ctt	cgc	gct	340
65	Glu	Asp	Met	Lys	Asn	Ile	Tyr	Leu	Asn	Ala	Ser	Asn	Tyr	Leu	Arg	Āla	
66				95					100				_	105			
68	cct	gag	aaa	tcc	gat	aaq	aag	aca	qtt	qtt	tca	caa	cca	tta	atq	qca	388
	Pro																
70			110		τ.	-1 -	- 1	115				<b></b>	120				
	aat	gag	_	acc	tat	cac	tac		tat	gag	gaa	220		aaa	ato	Cac	436
	Asn																430
74	71511	125	1111	лта	1 y 1	111.5	130	тут	тут	Giu	GIU		тут	GIY	тте	UIS	
	tta		++~	2 ± CT	aaa	t at		+ ~~	+~~	990	+~~	135					404
	ttg																484
	Leu	Asn	Leu	мет	Arg		GIN	Trp	Cys	Ата		GLY	Leu	Val	Phe		
	140					145					150					155	
	tgg																532
	Trp	Val	Ala	Val	Leu	Thr	Ala	Ala	Thr	Ile	Leu	Asn	Ile	Leu	Lys	Arg	
82					160					165					170		
	gta																580
85	Val	Phe	Gly	Lys	Asn	Ile	Met	Ala	Asn	Ser	Val	Lys	Lys	Ser	Leu	Ile	
86				175					180					185			
88	tac	cca	agc	gtt	tac	aaa	gac	tac	aac	gag	aga	act	ttc	tat	ctt	tgg	628
	Tyr																
90			190		-	-	-	195					200	-		-	
92	aaa	cat	tta	cca	ttc	aac	ttt	aca	act	cga	aac	aaa	aga	ata	αta	at.t.	676
	Lys																0,0
94	1	205					210			5	- I	215	011			Val	
96	ctt	atc	ttt	atc	att	cta	act	att	CtC	tca	ctc	tct	ttc	aca	cat	aac	724
	ctt																724
97	Leu				Ile	Leu					Leu					Asn	724
97 98	Leu 220	Ile	Phe	Val	Ile	Leu 225	Thr	Ile	Leu	Ser	Leu 230	Ser	Phe	Gly	His	Asn 235	
97 98 10	Leu 220 ato	Ile aag	Phe ttg	Val cca	Ile cat	Leu 225 cct	Thr tac	Ile gat	Leu aga	Ser cct	Leu 230 aga	Ser tgg	Phe aga	Gly aga	His tca	Asn 235 atg	724 772
97 98 10 10	Leu 220 ato l Ile	Ile aag	Phe ttg	Val cca	Ile cat His	Leu 225 cct Pro	Thr tac	Ile gat	Leu aga	Ser cct Pro	Leu 230 aga Arg	Ser tgg	Phe aga	Gly aga	His tca Ser	Asn 235 atg Met	
97 98 10 10 10	Leu 220 ato 1 Ile	Ile : aag : Lys	Phe ttg Leu	Val cca Pro	Ile cat His 240	Leu 225 cct Pro	Thr tac Tyr	Ile gat Asp	Leu aga Arg	Ser cct Pro 245	Leu 230 aga Arg	Ser tgg Trp	Phe aga Arg	Gly aga Arg	His tca Ser 250	Asn 235 atg Met	772
97 98 10: 10: 10:	Leu 220 ato 1 Ile 2	Ile aag Lys	Phe ttg Leu	Val cca Pro	cat His 240	Leu 225 cct Pro	Thr tac Tyr gct	Ile gat Asp	Leu aga Arg ttg	Ser cct Pro 245 atg	Leu 230 aga Arg	Ser tgg Trp	Phe aga Arg	Gly aga Arg ctt	His tca Ser 250	Asn 235 atg Met	
97 98 10 10 10 10 10	Leu 220 ato 1 Ile 2 4 gca 5 Ala	Ile aag Lys	Phe ttg Leu	Val cca Pro tca Ser	cat His 240	Leu 225 cct Pro	Thr tac Tyr gct	Ile gat Asp	aga Arg ttg Leu	cct Pro 245 atg	Leu 230 aga Arg	Ser tgg Trp	Phe aga Arg	Gly aga Arg ctt	His tca Ser 250 tto Phe	Asn 235 atg Met	772
97 98 10 10 10 10 10 10	Leu 220 ato 1 Ile 2 4 gca 5 Ala	Ile aag Lys tto Phe	Phe ttg Leu gtc Val	Val CCa Pro tca Ser 255	cat His 240 cgc Arg	Leu 225 cct Pro cgt	Thr tac Tyr gct Ala	gat Asp gac Asp	aga Arg ttg Leu 260	Ser cct Pro 245 atg Met	Leu 230 aga Arg gca Ala	Ser tgg Trp atc	Phe aga Arg gct Ala	Gly aga Arg ctt Leu 265	His tca Ser 250 tto Phe	Asn 235 atg Met ccc	772 820
97 98 10 10 10 10 10 10 10	Leu 220 2 atc 1 Ile 2 4 gca 5 Ala 6 gtg	Ile aag Lys tto Phe	Phe ttg Leu gtc Val	Val cca Pro tca Ser 255	cat His 240 cgc Arg	Leu 225 cct Pro cgt Arg	Thr tac Tyr gct Ala	gat Asp gac Asp	Leu aga Arg ttg Leu 260 aac	Ser cct Pro 245 atg Met	Leu 230 aga Arg gca Ala	Ser tgg Trp atc	Phe aga aga argument aga argume	Gly aga Arg ctt Leu 265	His Ser 250 tto Phe	Asn 235 atg Met ccc Pro	772
97 98 10: 10: 10: 10: 10: 10:	Leu 220 ato 1 Ile 2 4 gca 5 Ala 6 gtg 9 Val	Ile aag Lys tto Phe	Phe ttg teu yal	Val cca Pro tca Ser 255 ctt	cat His 240 cgc Arg	Leu 225 cct Pro cgt Arg	Thr tac Tyr gct Ala	gat Asp gac Asp cgg Arg	Leu aga Arg ttg Leu 260 aac	Ser cct Pro 245 atg Met	Leu 230 aga Arg gca Ala	Ser tgg Trp atc	Phe aga aga argument aga argume	Gly aga Arg ctt Leu 265	His Ser 250 tto Phe	Asn 235 atg Met ccc	772 820
97 98 100 100 100 100 100 100 100 110	Leu 220 2 atc 1 Ile 2 4 gca 5 Ala 5 yca 9 Val	Ile aag Lys tto Phe gtg	Phe ttg teu gtc Val tac Tyr 270	Val cca Pro tca Ser 255 ctt	cat His 240 cgc Arg ttc Phe	Leu 225 cct Pro cgt Arg ggt Gly	tac Tyr gct Ala atc	gat Asp gac Asp cgg Arg 275	aga Arg ttg Leu 260 aac Asn	cct Pro 245 atg Met aac Asn	Leu 230 aga Arg gca Ala ccc Pro	Ser tgg Trp atc Ile ttc Phe	Phe aga Arg gct Ala atc	Gly aga Arg ctt Leu 265	His Ser 250 tto Phe ato	Asn 235 atg Met ccc Pro	772 820
97 98 100 100 100 100 100 110 110 111	Leu 220 2 atc 1 Ile 2 4 gca 5 Ala 6 yca 9 Val 0 gga	Ile aage Lys tto Phe Val	Phe ttg tcut tac Tyr ago	Val cca Pro tca Ser 255 ctt Leu	cat His 240 cgc Arg ttc Phe	Leu 225 cct Pro cgt Arg ggt Gly	tac Tyr gct Ala atc Ile	gat Asp gac Asp cgg Arg 275 aac	aga Arg ttg Leu 260 aac Asn	cct Pro 245 atg Met aac Asn	Leu 230 aga Arg gca Ala ccc Pro	Ser tgg Trp atc Ile ttc Phe aaa	Phe aga Arg Arg Ala	Gly aga Arg ctt Leu 265 cca Pro	His tca Ser 250 tto Phe ato	Asn 235 atg Met ccc Pro acc	772 820
97 98 100 100 100 100 100 110 110 111	Leu 220 2 atc 1 Ile 2 4 gca 5 Ala 6 yca 9 Val 0 gga	Ile aage Lys tto Phe Val	Phe ttg tcut tac Tyr ago	Val cca Pro tca Ser 255 ctt Leu	cat His 240 cgc Arg ttc Phe	Leu 225 cct Pro cgt Arg ggt Gly	tac Tyr gct Ala atc Ile	gat Asp gac Asp cgg Arg 275 aac	aga Arg ttg Leu 260 aac Asn	cct Pro 245 atg Met aac Asn	Leu 230 aga Arg gca Ala ccc Pro	Ser tgg Trp atc Ile ttc Phe aaa	Phe aga Arg Arg Ala	Gly aga Arg ctt Leu 265 cca Pro	His tca Ser 250 tto Phe ato	Asn 235 atg Met ccc Pro	772 820 868
97 98 100 100 100 100 100 110 110 111	Leu 220 atc 1 Ile 2 1 gca 5 Ala 6 gtg 9 Val 0 2 gga 3 Gly	Ile aage Lys tto Phe Val	Phe strong true tac Tyr ago Ser	Val cca Pro tca Ser 255 ctt Leu	cat His 240 cgc Arg ttc Phe	Leu 225 cct Pro cgt Arg ggt Gly	tac Tyr gct Ala atc Ile	gat Asp gac Asp cgg Arg 275 aac Asn	aga Arg ttg Leu 260 aac Asn	cct Pro 245 atg Met aac Asn	Leu 230 aga Arg gca Ala ccc Pro	Ser tgg Trp atc Ile ttc Phe aaa	Phe aga Arg Arg Ala	Gly aga Arg ctt Leu 265 cca Pro	His tca Ser 250 tto Phe ato	Asn 235 atg Met ccc Pro acc	772 820 868
97 98 100 100 100 100 100 110 111 111 111	Leu 220 atc l Ile 2 l gca 5 Ala 5 Ala 6 yca 9 Val 0 2 gga 3 Gly	Ile  aag Lys  tto Phe yal ttg Leu 285	Phe ttg Leu gtc Val tac Tyr 270 agc	Val CCa Pro tca Ser 255 Ctt Leu ttt	cat His 240 cgc Arg ttc Phe agt Ser	Leu 225 cct Pro cgt Arg ggt Gly act	Thr tac Tyr gct Ala atc Ile ttc Phe 290	gat Asp gac Asp cgg Arg 275 aac Asn	Leu aga Arg ttg Leu 260 aac Asn ttt	cct Pro 245 atg Met aac Asn tac	Leu 230 aga Arg gca Ala ccc Pro cac	tgg Trp atc Ile ttc Phe aaa Lys 295	Phe aga aga Arg Ala atc atc 280 tgg Trp	Gly aga Arg ctt Leu 265 cca Pro	His tca Ser 250 tto Phe ato Ile gca Ala	Asn 235 atg Met ccc Pro acc Thr	772 820 868
97 98 100 100 100 100 100 110 111 111 114	Leu 220 atc 11le 2 1 gca 5 Ala 5 yca 9 Val 0 gga 8 Gly	Ile aage Lys tto Phe Val	Phe ttg tcg gtc val tac Tyr 270 age Ser	Val CCa Pro Cca Ser 255 Ctt Leu ttt	cat His 240 Cgc Arg ttc Phe agt Ser	Leu 225 cct Pro cgt Arg ggt Gly act Thr	Thr tac Tyr gct Ala atc Ile ttc Phe 290 gtc	gat Asp gac Asp cgg Arg 275 aac Asn	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat	cct Pro 245 atg Met aac Asn tac Tyr	Leu 230 aga Arg gca Ala ccc Pro cac His	tgg Trp atc Ile ttc Phe aaa Lys gtt	Phe aga aga Arg Ala atc Ile 280 tgg Trp atg	Gly aga Arc ctt Leu 265 cca Pro tca Ser	His tea Ser 250 tto Phe ato Ile gca Ala	Asn 235 atg Met ccc Pro acc Thr tac	772 820 868 916
977 988 100 100 100 100 100 110 111 111 111 1	Leu 220 atc l Ile 2 l gca 5 Ala 5 Ala 6 yca 9 Val 0 2 gga 3 Gly	Ile aag Lys tto Phe yal ttg Leu 285 tgc Cys	Phe ttg tcg gtc val tac Tyr 270 age Ser	Val CCa Pro Cca Ser 255 Ctt Leu ttt	cat His 240 Cgc Arg ttc Phe agt Ser	Leu 225 cct Pro cgt Arg ggt Gly act Thr	Thr tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val	gat Asp gac Asp cgg Arg 275 aac Asn	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat	cct Pro 245 atg Met aac Asn tac Tyr	Leu 230 aga Arg gca Ala ccc Pro cac His	tgg Trp atc Ile ttc Phe aaa Lys gtt Val	Phe aga aga Arg Ala atc Ile 280 tgg Trp atg	Gly aga Arc ctt Leu 265 cca Pro tca Ser	His tea Ser 250 tto Phe ato Ile gca Ala	Asn 235 atg Met ccc Pro acc Thr tac Tyr tca Ser	772 820 868 916
97 98 10 10 10 10 10 10 10 11 11 11 11 11 11	Leu 220 21 atc 22 23 atc 35 Ala 35 Ala 36 yval 22 gga 33 Gly 44 37 Val 33 300	aag Lys tto Phe Val ttg Leu 285 tgc	Phe ttg tac gtc Yal tac Tyr 270 agc Ser ttc	Val cca Pro tca Ser 255 ctt Leu ttt Phe atg	cat His 240 Cgc Arg ttc Phe agt Ser tta Leu	Leu 225 cct Pro cgt Arg ggt Gly act Thr gcc Ala 305	tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val	gat Asp gac Asp cgg Arg 275 aac Asn gtc	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat	cct Pro 245 atg Met aac Asn tac Tyr tca Ser	Leu 230 aga Arg gca Ala ccc Pro cac His atc Ile 310	tgg Trp atc Ile ttc Phe aaa Lys gtt Val	Phe aga Arg gct Ala atc 11e 280 tgg Trp atg	Gly aga Arg ctt Leu 265 cca Pro tca Ser acc	His tca Ser 250 tto Phe atc Ile gca Ala	Asn 235 atg Met ccc Pro acc Thr tac Tyr tca Ser 315	772 820 868 916
97 98 10 10 10 10 10 10 10 11 11 11 11 11 11	Leu 220 21 atc 22 21 gca 25 Ala 25 Ala 27 yal 28 gga 38 Gly 41 27 yal 38 3000 gga	Ile aag Lys tto Phe Val ttg Leu 285 tgc Cys	Phe ttg ttg gtc val tac Tyr 270 agc Ser ttc phe aaa	Val Cca Pro tca Ser 255 Ctt Leu ttt Phe atg Met	cat His 240 CgC Arg ttc Phe agt Ser tta Leu gga	Leu 225 cct Pro cgt Arg ggt Gly act Thr gcc Ala 305 gta	Thr tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val	gat Asp gac Asp cgg Arg 275 aac Asn gtc Val	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat His	cct Pro 245 atg Met aac Asn tac Tyr tca Ser ctt	Leu 230 aga Arg gca Ala ccc Pro cac His atc Ile 310 gta	tgg Trp atc Ile ttc Phe aaa Lys gtt Val	Phe aga argument aga atc atc atc atc atc atc atc atc atc at	Gly aga Arg ctt Leu 265 cca Pro tca Ser acc Thr	His tca Ser 250 tto Phe ato Ile gca Ala gct Ala	Asn 235 atg Met ccc Pro acc Thr tac Tyr tca Ser 315 ttc	772 820 868 916
97 98 100 100 100 100 100 110 111 111 112 112	Leu 220 Dato 1 Ile 2 14 gca 5 Ala 5 Ala 6 Yal 10 gga 14 gto 17 Val 18 300 10 gga 16 Gly	Ile aag Lys tto Phe Val ttg Leu 285 tgc Cys	Phe ttg ttg gtc val tac Tyr 270 agc Ser ttc phe aaa	Val Cca Pro tca Ser 255 Ctt Leu ttt Phe atg Met	cat His 240 Cgc Arg ttc Phe agt Ser tta Leu gga Gly	Leu 225 cct Pro cgt Arg ggt Gly act Thr gcc Ala 305 gta	Thr tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val	gat Asp gac Asp cgg Arg 275 aac Asn gtc Val	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat His	cct Pro 245 atg Met aac Asn tac Tyr tca Ser ctt Leu	Leu 230 aga Arg gca Ala ccc Pro cac His atc Ile 310 gta	tgg Trp atc Ile ttc Phe aaa Lys gtt Val	Phe aga argument aga atc atc atc atc atc atc atc atc atc at	Gly aga Arg ctt Leu 265 cca Pro tca Ser acc Thr	His tca Ser 250 tto Phe ato Ile gca Ala gct Ala tac Tyr	Asn 235 atg Met ccc Pro cacc Thr tac Tyr tca Ser 315 ttc Phe	772 820 868 916
97 98 100 100 100 100 100 110 111 111 112 112	Leu 220 0 atc 1 Ile 2 2 4 gca 5 Ala 5 Ala 6 yca 9 Val 2 gga 8 Gly 1 300 0 gga 1 Gly 2	Ile aag Lys tto Phe yal ttg Leu 285 tgc Cys gtt	ttggtcggtcggtcggtcggtcggtcggtcggtcggtcg	Val CCa Pro tca Ser 255 Ctt Leu ttt Phe atg Arg	cat His 240 Cgc Arg ttc Phe agt Ser tta Leu gga Gly 320	Leu 225 cct Pro cgt Arg ggt Gly act Thr gcc Ala 305 gta Val	tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val ttc	gat Asp gac Asp cgg Arg 275 aac Asn gtc Val cag Gln	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat His tct Ser	cct Pro 245 atg Met aac Asn tac Tyr tca Ser ctt Leu 325	Leu 230 aga Arg gca Ala ccc Pro cac His atc Ile 310 gta Val	tgg Trp atc Ile ttc Phe aaa Lys 295 gtt Val agg Arg	Phe aga atc atc Ile 280 tgg Trp atg	aga Arg ctt Leu 265 cca Pro tca Ser acc Thr	His tca Ser 250 tto Phe ato Ile gca Ala gct Ala tac Tyr 330	Asn 235 atg Met ccc Pro acc Thr tac Tyr tca Ser 315 ttc Phe	772 820 868 916 964
97 98 100 100 100 100 100 110 111 112 112 122 12	Leu 220 2 atc 1 Ile 2 gca 5 Ala 5 Ala 6 gtg 2 gga 3 Gly 1 300 6 gtg 6 Gly 2 ga 6 gtg	Ile  aag Lys  tto Phe yal ttg Leu 285 tgc Cys gtt Val	Phe ttg ttg gtc val tac Tyr 270 agc Ser ttc phe aaa Lys	Val CCa Pro tca Ser 255 Ctt Leu ttt Phe atg Arg ata	cat His 240 cgc Arg ttc Phe agt Ser tta Leu gga Gly 320 gta	Leu 225 cct Pro cgt Arg ggt Gly act Thr gcc Ala 305 gta Val	Thr tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val ttc Phe aca	gat Asp gac Asp cgg Arg 275 aac Asn gtc Val cag Gln att	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat His tct Ser ctt	cct Pro 245 atg Met aac Asn tac Tyr tca Ser ctt Leu 325 atg	Leu 230 aga Arg gca Ala ccc Pro cac His atc 310 gta Val	tgg Trp atc Ile ttc Phe aaa Lys 295 gtt Val agg Arg	Phe aga atc	aga Arg ctt Leu 265 cca Pro tca Ser acc Thr	His tca Ser 250 tto Phe ato Ile gca Ala gct Ala tac Tyr 330 tto	Asn 235 atg Met ccc Pro cacc Thr tac Tyr tca Ser 315 ttc Phe cag	772 820 868 916
97 98 100 100 100 100 100 110 111 112 112 122 12	Leu 220 2 atc 1 Ile 2 gca 5 Ala 5 Ala 6 gtg 2 gga 8 Gly 1 gtc 7 Val 8 300 9 gga 6 Gly 2 aga 6 Arg	Ile  aag Lys  tto Phe yal ttg Leu 285 tgc Cys gtt Val	Phe ttg ttg gtc val tac Tyr 270 agc Ser ttc phe aaa Lys	Val CCa Pro tca Ser 255 Ctt Leu ttt Phe atg Arg ata	cat His 240 cgc Arg ttc Phe agt Ser tta Leu gga Gly 320 gta	Leu 225 cct Pro cgt Arg ggt Gly act Thr gcc Ala 305 gta Val	Thr tac Tyr gct Ala atc Ile ttc Phe 290 gtc Val ttc Phe aca	gat Asp gac Asp cgg Arg 275 aac Asn gtc Val cag Gln att	Leu aga Arg ttg Leu 260 aac Asn ttt Phe cat His tct Ser ctt	cct Pro 245 atg Met aac Asn tac Tyr tca Ser ctt Leu 325 atg	Leu 230 aga Arg gca Ala ccc Pro cac His atc 310 gta Val	tgg Trp atc Ile ttc Phe aaa Lys 295 gtt Val agg Arg	Phe aga atc	aga Arg ctt Leu 265 cca Pro tca Ser acc Thr	His tca Ser 250 tto Phe ato Ile gca Ala gct Ala tac Tyr 330 tto	Asn 235 atg Met ccc Pro cacc Thr tac Tyr tca Ser 315 ttc Phe cag	772 820 868 916 964

## RAW SEQUENCE LISTING

DATE: 09/14/2004 PATENT APPLICATION: US/10/625,821A TIME: 10:07:22

Input Set : A:\55022div.app

											gaa						1108
	Ser	Glu		Val	Phe	Arg	Asn	_	Gly	Tyr	Glu	Ile		Leu	Leu	Ile	
130			350					355					360				
											gct						1156
	His		Ala	Met	Asn	He		Phe	He	He	Ala		Tyr	Tyr	His	Cys	
134		365			4		370					375					1004
											tcc						1204
		Thr	ьeu	GIY	rrp		GIY	Trp	тте	Trp	Ser	мет	Ата	GIY	11e		
138		++ a	a . a	200	++ a	385	~~~	~++	~+~	~~+	390	n + n	a+~	222	~~~	395	1050
											atc Ile						1252
142	СуБ	FILE	АБР	Arg	400	Cys	Arg	116	vai	405	11.6	116	Mec	ASII	410	Gry	
	ctt	aad	acc	acc		tta	tca	acc	aca		gat	tet	aac	att		aad	1300
		_		_		-				-	Asp			_		_	1500
146		-1-		415		Lou	001		420	пор	пор	DC1	11011	425		БуБ	
	atc	tct	atc		aaq	cct	aaq	ttc		aaq	tat	caa	ata		qca	ttt	1348
										_	Tyr				-		
150			430	•	•		-	435		•	-		440	1			
152	gcc	tat	atg	tac	ttt	ctt	tca	cca	aaa	tca	gcc	tgg	ttc	tac	agt	ttt	1396
153	Ala	Tyr	Met	Tyr	Phe	Leu	Ser	Pro	Lys	Ser	Ala	Trp	Phe	Tyr	Ser	Phe	
154		445					450					455					
156	caa	tct	cat	CCC	ttc	aca	gtc	cta	tca	gaa	agg	cac	aga	gat	cct	aac	1444
157	Gln	$\operatorname{Ser}$	His	Pro	Phe	Thr	Val	Leu	Ser	Glu	Arg	His	Arg	Asp	Pro	Asn	
158						465					470					475	
			_				_		_		gct		_				1492
	Asn	Pro	Asp	Gln		Thr	Met	Tyr	Val	-	Ala	Asn	Lys	Gly		Thr	
162					480					485					490		
					_		-		_	-	cca				_	_	1540
166	Arg	val	ьeu	495	ser	пув	val	Leu	500	Ата	Pro	ASII	HIS	505	Val	Asp	
	taa	220	2 + +		++=	asa	aa =	CC 3		aac	gta	a a t	ata		C a C	a++	1588
											Val		_				1300
170	0,5	27.0	510	1110	DC G	Q1 u	017	515	-1-	OI I	var	****	520		*****	110	
	acc	aaa		aaq	aga	aat	cta		qqa	qta	gct	aca		ctc	aac	ata	1636
	_			_	_			_		_	Āla						
174		525		•			530		•			535	-		-		
176	gca	gcc	atc	tac	CCC	cat	ttc	gta	gaa	tgc	ctt	aga	ttg	cct	agc	act	1684
177	Ala	Ala	Ile	Tyr	Pro	His	Phe	Val	Glu	Cys	Leu	Arg	Leu	Pro	Ser	$\operatorname{Thr}$	
178	540					545					550					555	
180	gat	caa	ctg	cag	cac	aag	ttc	tac	tgg	atc	gtc	aac	gac	ctt	agt	cac	1732
181	Asp	Gln	Leu	Gln	His	Lys	Phe	Tyr	Trp	Ile	Val	Asn	Asp	Leu	Ser	His	
182					560					565					570		
		_			_						ctt	_				-	1780
	Leu	Lys	Trp		Glu	Asn	Glu	Leu		Trp	Leu	Lys	Glu	-	Ser	Cys	
186				575					580					585			
	_	_		_							gtg		_				1828
	GIU	val		val	тте	ıyr	Thr	_	ser	ser	Val	GIU		Tnr	Asn	ser	
190	~~ L		590		222	~~-		595	~		~	~~~	600	~~~	- <del>-</del> -	200	1076
192	yat	gag	cdd	act	aay	ggt	CCC	gat	gac	aag	gaa	yaa	LCE	yaa	acc	acc	1876

## RAW SEQUENCE LISTING

DATE: 09/14/2004 PATENT APPLICATION: US/10/625,821A TIME: 10:07:22

Input Set : A:\55022div.app

193	Asp	Glu	Ser	Thr	Lys	Gly	Phe	Asp	Asp	Lys	Glu	Glu	Ser	Glu	Ile	Thr	
194		605					610					615					
196	gta	gaa	tgc	ctt	aac	aag	agg	cca	gac	ctc	aaa	gag	cta	gtg	aga	tca	1924
197	Val	Glu	Cys	Leu	Asn	Lys	Arg	Pro	Asp	Leu	Lys	Glu	Leu	Val	Arg	Ser	
198	620					625					630					635	
200	gag	atc	aaa	ttg	tca	gaa	ctc	gag	aac	aac	aac	atc	act	ttc	tac	tca	1972
201	Glu	Ile	Lys	Leu	Ser	Glu	Leu	Glu	Asn	Asn	Asn	Ile	Thr	Phe	Tyr	Ser	
202					640					645					650		
204	tgc	gga	cca	gcg	act	ttc	aat	gac	gac	ttt	agg	aat	gca	gtt	gta	caa	2020
205	Cys	Gly	Pro	Ala	Thr	Phe	Asn	Asp	Asp	Phe	Arg	Asn	Ala	Val	Val	Gln	
206				655					660					665			
208	ggt	atc	gat	tct	agt	ctg	aag	ata	gat	gtc	gaa	cta	gag	gag	gag	agt	2068
209	Gly	Ile	Asp	Ser	Ser	Leu	Lys	Ile	Asp	Val	Glu	Leu	Glu	Glu	Glu	Ser	
210			670					675					680				
212																2092	
213	3 Phe Thr Trp																
214																	
217	7 <210> SEQ ID NO: 2																
218	8 <211> LENGTH: 686																
219	<212	2> T	YPE:	PRT													
220	<213	3 > OI	RGAN:	[SM:	Art:	ific:	ial S	Seque	ence								
222	<220	0 > FI	EATUI	RE:													
223	<223	3 > 0'	THER	INF	ORMA'	rion	: Des	scrip	otion	ı of	Art:	ific:	ial S	Seque	ence:	: Syn	thetic
224	223 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 224 saccharomyces cerevisiae																
226	<400	0> SI	EQUEI	VCE:	2												
227	Met	Val	Arg	Thr	Arg	Val	Leu	Phe	Cys	Leu	Phe	Ile	Ser	Phe	Phe	Ala	
228	1				5					10					15		
230	Thr	Val	Gln	Ser	Ser	Ala	Thr	Leu	Ile	Ser	Thr	Ser	Cys	Ile	Ser	Gln	
231				20					25					30			
233	Ala	Ala		Tyr	Gln	Phe	Gly	Cys	Ser	Ser	Lys	Ser	Lys	Ser	Cys	Tyr	
234			35					40					45				
236	Cys	_	Asn	Ile	Asn	Trp	Leu	Gly	Ser	Val	Thr	Ala	Cys	Ala	Tyr	Glu	
237		50					55					60					
		Ser	Lys	Ser	Asn	_	Thr	Leu	Asp	Ser	Ala	Leu	Met	Lys	Leu	Ala	
240	65					70					75					80	
	Ser	Gln	Cys	Ser		Ile	Lys	Val	Tyr		Leu	Glu	Asp	Met	_	Asn	
243					85					90					95		
	Ile	Tyr	Leu		Ala	Ser	Asn	Tyr		Arg	Ala	Pro	Glu		Ser	Asp	
246				100					105.					110			
	Lys	Lys		Val	Val	Ser	Gln		Leu	Met	Ala	Asn		Thr	Ala	Tyr	
249			115		_			120					125				
	His	-	Tyr	Tyr	Glu	Glu	Asn	Tyr	Gly	Ile	His		Asn	Leu	Met	Arg	
252		130					135					140					
		Gln	Trp	Cys	Ala		Gly	Leu	Val	Phe		Trp	Val	Ala	Val		
	145	_	_		_	150					155					160	
	Thr	Ala	Ala	Thr		Leu	Asn	Ile	Leu		Arg	Val	Phe	Gly	Lys	Asn	
258	_				165					170					175		
	Ile	Met	Ala		Ser	Val	Lys	Lys		Leu	Ile	Tyr	Pro	Ser	Val	$\mathtt{Tyr}$	
261				180					185					190			

PATENT APPLICATION: US/10/625,821A DATE: 09/14/2004
TIME: 10:07:22

Input Set : A:\55022div.app

	Lys	Asp	_	Asn	Glu	Arg	Thr		Tyr	Leu	Trp	Lys	_	Leu	Pro	Phe
264	_	_,	195	,	_	~ 7	_	200	_			_	205			
	Asn		Thr	Thr	Arg	GIY		GIŸ	Leu	vai	vaı		He	Phe	Val	TTE
267	_	210			_	_	215				_	220	_		_	
		Thr	Ile	Leu	Ser		Ser	Phe	Gly	His		Ile	Lys	Leu	Pro	
	225					230					235	_				240
272	Pro	Tyr	Asp	Arg		Arg	Trp	Arg	Arg		Met	Ala	Phe	Val		Arg
273					245					250					255	
275	Arg	Ala	Asp	Leu	Met	Ala	Ile	Ala		Phe	Pro	Val	Val	-	Leu	Phe
276				260					265					270		
278	Gly	Ile	Arg	Asn	Asn	Pro	Phe	Ile	Pro	Ile	Thr	Gly	Leu	Ser	Phe	Ser
279			275					280					285			
281	Thr	Phe	Asn	Phe	Tyr	His	Lys	${\tt Trp}$	Ser	Ala	Tyr	Val	Cys	Phe	Met	Leu
282		290					295					300				
284	Ala	Val	Val	His	Ser	Ile	Val	Met	Thr	Ala	Ser	Gly	Val	Lys	Arg	Gly
285	305					310					315					320
287	Val	Phe	Gln	Ser	Leu	Val	Arg	Lys	Phe	Tyr	Phe	Arg	${\tt Trp}$	Gly	Ile	Val
288					325					330					335	
290	Ala	Thr	Ile	Leu	Met	Ser	Ile	Ile	Ile	Phe	Gln	Ser	Glu	Lys	Val	Phe
291				340					345					350		
293	Arg	Asn	Arg	Gly	Tyr	Glu	Ile	Phe	Leu	Leu	Ile	His	Lys	Ala	Met	Asn
294			355					360					365			
296	Ile	Met	Phe	Ile	Ile	Ala	Met	Tyr	Tyr	His	Cys	His	Thr	Leu	Gly	Trp
297		370					375					380				
299	Met	Gly	Trp	Ile	Trp	Ser	Met	Ala	Gly	Ile	Leu	Cys	Phe	Asp	Arg	Phe
	385					390					395					400
302	Cys	Arg	Ile	Val	Arg	Ile	Ile	Met	Asn	Gly	Gly	Leu	Lys	Thr	Ala	Thr
303					405					410					415	
305	Leu	Ser	Thr	Thr	Asp	Asp	Ser	Asn	Val	Ile	Lys	Ile	Ser	Val	Lys	Lys
306				420					425					430		
308	Pro	Lys	Phe	Phe	Lys	Tyr	Gln	Val	Gly	Ala	Phe	Ala	Tyr	Met	Tyr	Phe
309			435					440					445			
311	Leu	Ser	Pro	Lys	Ser	Ala	Trp	Phe	Tyr	Ser	Phe	Gln	Ser	His	Pro	Phe
312		450					455					460				
314	Thr	Val	Leu	Ser	Glu	Arg	His	Arg	Asp	Pro	Asn	Asn	Pro	Asp	Gln	Leu
315	465					470					475					480
317	Thr	Met	Tyr	Val	Lys	Ala	Asn	Lys	Gly	Ile	Thr	Arg	Val	Leu	Leu	Ser
318			•		485			•	•	490					495	
	Lvs	Val	Leu	Ser	Ala	Pro	Asn	His	Thr	Val	Asp	Cys	Lys	Ile	Phe	Leu
321				500					505		-	-	-	510		
	Glu	Glv	Pro	Tyr	Glv	Val	Thr	Val	Pro	His	Ile	Ala	Lvs	Leu	Lvs	Ara
324		. 1	515	•	. 4			520					525		1	
	Asn	Len		Gly	Val	Ala	Ala		Len	Glv	Val	Ala		Ile	Tvr	Pro
327		530		1			535	1		1		540			- 1 -	
	His		Val	Glu	Cvs	Leu		Leu	Pro	Ser	Thr		Gln	Leu	Gln	His
	545			~= ~	~15	550	9		0	~	555	~P	~		~ * * *	560
		Phe	Tvr	Trp	Tle		Agn	Asn	Len	Ser		Leu	Lvs	Trp	Phe	
333	шую	1110	+ 1 <del>-</del>	1	565	· UI	- 1011	1101	204	570	1110		-10		575	
	7) (2.20	Gliv	T.e.17	Gln		T.eu	Lare	Glu	Luc		Cve	Glu	Va 1	Ser		Tlo
233	HSII	GIU	ш <del>с</del> и	G 111	TTD	пец	пуъ	GIU	шув	DCT	Cys	Jiu	VUI	<b>5</b> 61	val	T 7 C

VERIFICATION SUMMARY

DATE: 09/14/2004 TIME: 10:07:23

Input Set : A:\55022div.app

Output Set: N:\CRF4\09142004\J625821A.raw

PATENT APPLICATION: US/10/625,821A